

SEQUENCE LISTING

<110> Chadwick, Brian Paul
Frischauf, Anna-Maria

<120> METHODS AND COMPOSITIONS RELATING TO CD39-LIKE
POLYPEPTIDES AND NUCLEIC ACIDS

<130> 9598-066

<140> 09/240,639
<141> 1999-01-29

<160> 29

<170> PatentIn Ver. 2.0

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tgctgccctg gcatcagcct cttccagtc catctggcca gagggctgtc tggacctggg	1809																																																																																										
ccctgctcaa tgccacctgt ctgcctggc tccaagtggg caggaccagg acagaaccac	1869																																																																																										
aggcacacac tgagggggca gtgtggctcc ctgcctgtcc catccccatg ccccgccgc	1929																																																																																										
ggggctgtgg ctgctgctgt gcatgtccct gcgatggag tcttgcgtcc cagcctgtca	1989																																																																																										
gtttcctccc cagggcagag ctcccccttcc tgcaagagtc tgggaggccgg tgcaggctgt	2049																																																																																										
cctggctgct ctgggaaagc cgagggacag ccataacacc cccgggacag taggtctggg	2109																																																																																										
cggcaccact gggaaactctg gacttgagtg tgtttgctct tccttgggta tgaatgtgtg	2169																																																																																										

agttcaccca gaggcctgct ctcctcacac attgtgtggt ttggggtaa tgatggaggg 2229
agacacacctc tcatagacgg caggtgccc ccttcaggg agtctccag catggcgga 2289
tgccgggcat gagctgctgt aaactattt gggctgtgct gcttgagtga cgtctctgtc 2349
gtgtgggtgc caagtgcttg tgttagaaact gtgttctgag cccccccttc tggacaccaa 2409
ctgtgtcctg tgaatgtatc gctactgtga gctgttccc cctagccagg gccatgtctt 2469
aggtgcagct gtgcacagg tcagctgagc cacagtccca gaaccaagct ctcgggtct 2529
cgggcccacca tccgcccacc tcgggctgac cccacctcct ccatggacag tgtgagcccc 2589
gggcccgtgca tcctgctcag tgtggcgtca gtgtcggggc tgagccctt gagctgcttc 2649
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tgacaggggc ttctccttca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 2762

<210> 2
<211> 456
<212> PRT
<213> Homo sapiens

<400> 2
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Tyr Pro Leu Gly Leu Cys Val Gly Val Phe Ile Tyr Val Ala Tyr Ile
20 25 30
Lys Trp His Arg Ala Thr Ala Thr Gln Ala Phe Phe Ser Ile Thr Arg
35 40 45
Ala Ala Pro Gly Ala Arg Trp Gly Gln Gln Ala His Ser Pro Leu Gly
50 55 60
Thr Ala Ala Asp Gly His Glu Val Phe Tyr Gly Ile Met Phe Asp Ala
65 70 75 80
Gly Ser Thr Gly Thr Arg Val His Val Phe Gln Phe Thr Arg Pro Pro
85 90 95
Arg Glu Thr Pro Thr Leu Thr His Glu Thr Phe Lys Ala Val Lys Pro
100 105 110
Gly Leu Ser Ala Tyr Ala Asp Asp Val Glu Lys Ser Ala Gln Gly Ile
115 120 125
Arg Glu Leu Leu Asp Val Ala Lys Gln Asp Ile Pro Phe Asp Phe Trp
130 135 140
Lys Ala Thr Pro Leu Val Leu Lys Ala Thr Ala Gly Leu Arg Leu Leu
145 150 155 160

Pro Gly Glu Lys Ala Gln Lys Leu Leu Gln Lys Val Lys Glu Val Phe
 165 170 175
 Lys Ala Ser Pro Phe Leu Val Gly Asp Asp Cys Val Ser Ile Met Asn
 180 185 190
 Gly Thr Asp Glu Gly Val Ser Ala Trp Ile Thr Ile Asn Phe Leu Thr
 195 200 205
 Gly Ser Leu Lys Thr Pro Gly Gly Ser Ser Val Gly Met Leu Asp Leu
 210 215 220
 Gly Gly Gly Ser Thr Gln Ile Ala Phe Leu Pro Arg Val Glu Gly Thr
 225 230 235 240
 Leu Gln Ala Ser Pro Pro Gly Tyr Leu Thr Ala Leu Arg Met Phe Asn
 245 250 255
 Arg Thr Tyr Lys Leu Tyr Ser Tyr Ser Tyr Leu Gly Leu Gly Leu Met
 260 265 270
 Ser Ala Arg Leu Ala Ile Leu Gly Gly Val Glu Gly Gln Pro Ala Lys
 275 280 285
 Asp Gly Lys Glu Leu Val Ser Pro Cys Leu Ser Pro Ser Phe Lys Gly
 290 295 300
 Glu Trp Glu His Ala Glu Val Thr Tyr Arg Val Ser Gly Gln Lys Ala
 305 310 315 320
 Ala Ala Ser Leu His Glu Leu Cys Ala Ala Arg Val Ser Glu Val Leu
 325 330 335
 Gln Asn Arg Val His Arg Thr Glu Glu Val Lys His Val Asp Phe Tyr
 340 345 350
 Ala Phe Ser Tyr Tyr Asp Leu Ala Ala Gly Val Gly Leu Ile Asp
 355 360 365
 Ala Glu Lys Gly Gly Ser Leu Val Val Gly Asp Phe Glu Ile Ala Ala
 370 375 380
 Lys Tyr Val Cys Arg Thr Leu Glu Thr Gln Pro Gln Ser Ser Pro Phe
 385 390 395 400
 Ser Cys Met Asp Leu Thr Tyr Val Ser Leu Leu Leu Gln Glu Phe Gly
 405 410 415
 Phe Pro Arg Ser Lys Val Leu Lys Leu Thr Arg Lys Ile Asp Asn Val
 420 425 430
 Glu Thr Ser Trp Ala Leu Gly Ala Ile Phe His Tyr Ile Asp Ser Leu
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 Asn Arg Gln Lys Ser Pro Ala Ser
 450 455

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 <212> DNA
 <213> Homo sapiens

<220>
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 Met Phe Thr Val Leu Thr Arg Gln Pro Cys
 1 5 10

gag caa gca ggc ctc aag gcc ctc tac cga act cca acc atc att gcc 160
 Glu Gln Ala Gly Leu Lys Ala Leu Tyr Arg Thr Pro Thr Ile Ile Ala
 15 20 25

ttg gtg gtc ttg ctt gtg agt att gtg gta ctt gtg agt atc act gtc 208
 Leu Val Val Leu Val Ser Ile Val Val Leu Val Ser Ile Thr Val
 30 35 40

atc cag atc cac aag caa gag gtc ctc cct cca gga ctg aag tat ggt 256
 Ile Gln Ile His Lys Gln Glu Val Leu Pro Pro Gly Leu Lys Tyr Gly
 45 50 55

att gtg ctg gat gcc ggg tct tca aga acc aca gtc tac gtg tat caa 304
 Ile Val Leu Asp Ala Gly Ser Ser Arg Thr Thr Val Tyr Val Tyr Gln
 60 65 70

tgg cca gca gaa aaa gag aat aat acc gga gtg gtc agt caa acc ttc 352
 Trp Pro Ala Glu Lys Glu Asn Asn Thr Gly Val Val Ser Gln Thr Phe
 75 80 85 90

aaa tgt agt gtg aaa ggc tct gga atc tcc agc tat gga aat aac ccc 400
 Lys Cys Ser Val Lys Gly Ser Gly Ile Ser Ser Tyr Gly Asn Asn Pro
 95 100 105

caa gat gtc ccc aga gcc ttt gag gag tgt atg caa aaa gtc aag ggg 448
 Gln Asp Val Pro Arg Ala Phe Glu Glu Cys Met Gln Lys Val Lys Gly
 110 115 120

cag gtt cca tcc cac ctc cac gga tcc acc ccc att cac ctg gga gcc 496
 Gln Val Pro Ser His Leu His Gly Ser Thr Pro Ile His Leu Gly Ala
 125 130 135

acg gct ggg atg cgc ttg ctg agg ttg caa aat gaa aca gca gct aat 544
 Thr Ala Gly Met Arg Leu Leu Arg Leu Gln Asn Glu Thr Ala Ala Asn
 140 145 150

gaa gtc ctt gaa agc atc caa agc tac ttc aag tcc cag ccc ttt gac 592
 Glu Val Leu Glu Ser Ile Gln Ser Tyr Phe Lys Ser Gln Pro Phe Asp
 155 160 165 170

ttt agg ggt gct caa atc att tct ggg caa gaa gaa ggg gta tat gga	175	180	185	640
Phe Arg Gly Ala Gln Ile Ile Ser Gly Gln Glu Glu Gly Val Tyr Gly				
tgg att aca gcc aac tat tta atg gga aat ttc ctg gag aag aac ctg	190	195	200	688
Trp Ile Thr Ala Asn Tyr Leu Met Gly Asn Phe Leu Glu Lys Asn Leu				
tgg cac atg tgg gtg cac ccg cat gga gtg gaa acc acg ggt gcc ctg	205	210	215	736
Trp His Met Trp Val His Pro His Gly Val Glu Thr Thr Gly Ala Leu				
gac tta ggt ggt gcc tcc acc caa ata tcc ttc gtg gca gga gag aag	220	225	230	784
Asp Leu Gly Gly Ala Ser Thr Gln Ile Ser Phe Val Ala Gly Glu Lys				
atg gat ctg aac acc agc gac atc atg cag gtg tcc ctg tat ggc tac	235	240	245	832
Met Asp Leu Asn Thr Ser Asp Ile Met Gln Val Ser Leu Tyr Gly Tyr				
255	260	265	250	
gta tac acg ctc tac aca cac agc ttc cag tgc tat ggc cgg aat gag	255	260	265	880
Val Tyr Thr Leu Tyr Thr His Ser Phe Gln Cys Tyr Gly Arg Asn Glu				
270	275	280		
gct gag aag aag ttt ctg gca atg ctc ctg cag aat tct cct acc aaa	270	275	280	928
Ala Glu Lys Lys Phe Leu Ala Met Leu Leu Gln Asn Ser Pro Thr Lys				
285	290	295		
acc atg ggc cat gta ttt gat agc ctg tgc act gtg gac cag agg cca	300	305	310	1024
Thr Met Gly His Val Phe Asp Ser Leu Cys Thr Val Asp Gln Arg Pro				
315	320	325	330	
cca tct ctg tgt aag gag aag gtg gct tcc ata ttt gac ttc aaa gct	335	340	345	1120
Pro Ser Leu Cys Lys Glu Lys Val Ala Ser Ile Phe Asp Phe Lys Ala				
350	355	360		
tgc cat gat caa gaa acc tgt tct ttt gat ggg gtt tat cag cca aag	350	355	360	1168
Cys His Asp Gln Glu Thr Cys Ser Phe Asp Gly Val Tyr Gln Pro Lys				
365	370	375		
att aaa ggg cca ttt gtg gct ttt gca gga ttc tac tac aca gcc agt				1216
Ile Lys Gly Pro Phe Val Ala Phe Ala Gly Phe Tyr Tyr Thr Ala Ser				
380	385	390		
gct tta aat ctt tca ggt agc ttt tcc ctg gac acc ttc aac tcc agc				1264
Ala Leu Asn Leu Ser Gly Ser Phe Ser Leu Asp Thr Phe Asn Ser Ser				

acc tgg aat ttc tgc tca cag aat tgg agt cag ctc cca ctg ctg ctc	395	400	405	410	1312
Thr Trp Asn Phe Cys Ser Gln Asn Trp Ser Gln Leu Pro Leu Leu Leu					
ccc aaa ttt gat gag gta tat gcc cgc tct tac tgc ttc tca gcc aac	415	420	425		1360
Pro Lys Phe Asp Glu Val Tyr Ala Arg Ser Tyr Cys Phe Ser Ala Asn					
tac atc tac cac ttg ttt gtg aac ggt tac aaa ttc aca gag gag act	430	435	440		1408
Tyr Ile Tyr His Leu Phe Val Asn Gly Tyr Lys Phe Thr Glu Glu Thr					
tgg ccc caa ata cac ttt gaa aaa gaa gtg ggg aat agc agc ata gcc	445	450	455		1456
Trp Pro Gln Ile His Phe Glu Lys Glu Val Gly Asn Ser Ser Ile Ala					
tgg tct ctt ggc tac atg ctc agc ctg acc aac cag atc cca gct gaa	460	465	470		1504
Trp Ser Leu Gly Tyr Met Leu Ser Leu Thr Asn Gln Ile Pro Ala Glu					
agc cct ctg atc cgt ctg ccc ata gaa cca cct gtc ttt gtg ggc acc	475	480	485	490	1552
Ser Pro Leu Ile Arg Leu Pro Ile Glu Pro Pro Val Phe Val Gly Thr					
ctc gct ttc ttc aca gtg gca gcc ttg ctg tgt ctg gca ttt ctt gca	495	500	505		1600
Leu Ala Phe Phe Thr Val Ala Ala Leu Leu Cys Leu Ala Phe Leu Ala					
tac ctg tgt tca gca acc aga aga aag agg cac tcc gag cat gcc ttt	510	515	520		1648
Tyr Leu Cys Ser Ala Thr Arg Arg Lys Arg His Ser Glu His Ala Phe					
gac cat gca gtg gat tct gac tgagccttca aagcagctcc tggagtccaa	525				1699
Asp His Ala Val Asp Ser Asp					
tggctgctta gagtcagcct ggggtggcacc aggcaatgca ggtgaagtgg ctgccttcag					1759
gaaataacaac taactaaaat caaacacccctt ggtcacgtgc ctctcaaata ctgatttctg					1819
ccacagcacc tcttgaggca tcccttggtt attctgtgca tattgttctt cagagacctc					1879
actacccaca tgctgatcta ttggggaaaca gagaagagac aggccactaa ggtcaggctc					1939
tttatattaa gttccccaga ggaagagtaa gttgagaagg tatcagtta atgttgaaga					1999
attgacctca gggctcagtt tccatttccc tccctcagta ttcttcctgg caagataccc					2059
attaaggcatt tcgccaatca gaatctcatt ttatagtttt tcccatttgtt cttaactaa					2119
gactttctt tagcaatctc gtaagcagtg aacccctca gatcagttaga atatagtatc					2179
tgggggagaa gacttacttc cttcaggcga gcagccacag ccaggctct gtcatacagg					2239
tagatcccga agcacagaga cataaaaaag gtctcccaga aaactataga ccattctcca					2299
agtggaaattc ccacttaggg ctctggcac tagattgcaa cctgtgtt tgcatacatc					2359

ctcatctcac cattgttattg ctatgccctc ccataaaaac acattgatcc ctagcaagat 2419
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atagaacgaa catcctactc tatgatttac taaccaatta ctttcccaga tcataagacct 2599
ctctgcatacg tagtcatagg tcttgacttt gggaaagaa aaggaagctg caggaatatt 2659
tatctccaaa gtcgaatgag aaagaactcc agcaaatcca atggctacaa actaaaaatc 2719
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ttgaaaaaaaa aaaaaaaaaa 2797

<210> 4
<211> 529
<212> PRT
<213> Homo sapiens

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Ala Leu Tyr Arg Thr Pro Thr Ile Ile Ala Leu Val Val Leu Leu Val
20 25 30
Ser Ile Val Val Leu Val Ser Ile Thr Val Ile Gln Ile His Lys Gln
35 40 45
Glu Val Leu Pro Pro Gly Leu Lys Tyr Gly Ile Val Leu Asp Ala Gly
50 55 60
Ser Ser Arg Thr Thr Val Tyr Val Tyr Gln Trp Pro Ala Glu Lys Glu
65 70 75 80
Asn Asn Thr Gly Val Val Ser Gln Thr Phe Lys Cys Ser Val Lys Gly
85 90 95
Ser Gly Ile Ser Ser Tyr Gly Asn Asn Pro Gln Asp Val Pro Arg Ala
100 105 110
Phe Glu Glu Cys Met Gln Lys Val Lys Gly Gln Val Pro Ser His Leu
115 120 125
His Gly Ser Thr Pro Ile His Leu Gly Ala Thr Ala Gly Met Arg Leu
130 135 140
Leu Arg Leu Gln Asn Glu Thr Ala Ala Asn Glu Val Leu Glu Ser Ile
145 150 155 160
Gln Ser Tyr Phe Lys Ser Gln Pro Phe Asp Phe Arg Gly Ala Gln Ile
165 170 175
Ile Ser Gly Gln Glu Glu Gly Val Tyr Gly Trp Ile Thr Ala Asn Tyr
180 185 190

Leu	Met	Gly	Asn	Phe	Leu	Glu	Lys	Asn	Leu	Trp	His	Met	Trp	Val	His
195					200					205					
Pro	His	Gly	Val	Glu	Thr	Thr	Gly	Ala	Leu	Asp	Leu	Gly	Gly	Ala	Ser
210			215						220						
Thr	Gln	Ile	Ser	Phe	Val	Ala	Gly	Glu	Lys	Met	Asp	Leu	Asn	Thr	Ser
225				230					235					240	
Asp	Ile	Met	Gln	Val	Ser	Leu	Tyr	Gly	Tyr	Val	Tyr	Thr	Leu	Tyr	Thr
	245					250				255					
His	Ser	Phe	Gln	Cys	Tyr	Gly	Arg	Asn	Glu	Ala	Glu	Lys	Lys	Phe	Leu
		260				265				270					
Ala	Met	Leu	Leu	Gln	Asn	Ser	Pro	Thr	Lys	Asn	His	Leu	Thr	Asn	Pro
	275				280					285					
Cys	Tyr	Pro	Arg	Asp	Tyr	Ser	Ile	Ser	Phe	Thr	Met	Gly	His	Val	Phe
	290				295					300					
Asp	Ser	Leu	Cys	Thr	Val	Asp	Gln	Arg	Pro	Glu	Ser	Tyr	Asn	Pro	Asn
	305				310			315			320				
Asp	Val	Ile	Thr	Phe	Glu	Gly	Thr	Gly	Asp	Pro	Ser	Leu	Cys	Lys	Glu
		325				330					335				
Lys	Val	Ala	Ser	Ile	Phe	Asp	Phe	Lys	Ala	Cys	His	Asp	Gln	Glu	Thr
		340				345					350				
Cys	Ser	Phe	Asp	Gly	Val	Tyr	Gln	Pro	Lys	Ile	Lys	Gly	Pro	Phe	Val
		355				360				365					
Ala	Phe	Ala	Gly	Phe	Tyr	Tyr	Thr	Ala	Ser	Ala	Leu	Asn	Leu	Ser	Gly
		370			375			380							
Ser	Phe	Ser	Leu	Asp	Thr	Phe	Asn	Ser	Ser	Thr	Trp	Asn	Phe	Cys	Ser
	385			390				395				400			
Gln	Asn	Trp	Ser	Gln	Leu	Pro	Leu	Leu	Pro	Lys	Phe	Asp	Glu	Val	
			405			410					415				
Tyr	Ala	Arg	Ser	Tyr	Cys	Phe	Ser	Ala	Asn	Tyr	Ile	Tyr	His	Leu	Phe
		420				425					430				
Val	Asn	Gly	Tyr	Lys	Phe	Thr	Glu	Glu	Thr	Trp	Pro	Gln	Ile	His	Phe
		435			440				445						
Glu	Lys	Glu	Val	Gly	Asn	Ser	Ser	Ile	Ala	Trp	Ser	Leu	Gly	Tyr	Met
		450			455				460						
Leu	Ser	Leu	Thr	Asn	Gln	Ile	Pro	Ala	Glu	Ser	Pro	Leu	Ile	Arg	Leu
		465			470			475				480			
Pro	Ile	Glu	Pro	Pro	Val	Phe	Val	Gly	Thr	Leu	Ala	Phe	Phe	Thr	Val
			485			490					495				

Ala Ala Leu Leu Cys Leu Ala Phe Leu Ala Tyr Leu Cys Ser Ala Thr
500 505 510

Arg Arg Lys Arg His Ser Glu His Ala Phe Asp His Ala Val Asp Ser
515 520 525

Asp

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<211> 1998
<212> DNA
<213> Homo sapiens

<220>
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<222> (247)..(1530)

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aaaaagtgtat ataataaaagg aaccaaggag aaaattcaga aggaaagaaaa aaattgcctc 180
tgcaggtgtg cgagcaggat tgcttctgca acaaaagcct ccacccagcc acatcttggg 240
aaaaga atg gcc act tct tgg ggc aca gtc ttt ttc atg ctg gtg gta 288
Met Ala Thr Ser Trp Gly Thr Val Phe Phe Met Leu Val Val
1 5 10
tcc tgt gtt tgc agc gct gtc tcc cac agg aac cag cag act tgg ttt 336
Ser Cys Val Cys Ser Ala Val Ser His Arg Asn Gln Gln Thr Trp Phe
15 20 25 30
gag ggt atc ttc ctg tct tcc atg tgc ccc atc aat gtc agc gcc agc 384
Glu Gly Ile Phe Leu Ser Ser Met Cys Pro Ile Asn Val Ser Ala Ser
35 40 45
acc ttg tat gga att atg ttt gat gca ggg agc act gga act cga att 432
Thr Leu Tyr Gly Ile Met Phe Asp Ala Gly Ser Thr Gly Thr Arg Ile
50 55 60
cat gtt tac acc ttt gtg cag aaa atg cca gga cag ctt cca att cta 480
His Val Tyr Thr Phe Val Gln Lys Met Pro Gly Gln Leu Pro Ile Leu
65 70 75
gaa ggg gaa gtt ttt gat tct gtg aag cca gga ctt tct gct ttt gta 528
Glu Gly Glu Val Phe Asp Ser Val Lys Pro Gly Leu Ser Ala Phe Val
80 85 90
gat caa cct aag cag ggt gct gag acc gtt caa ggg ctc tta gag gtg 576
Asp Gln Pro Lys Gln Gly Ala Glu Thr Val Gln Gly Leu Leu Glu Val
95 100 105 110

gcc aaa gac tca atc ccc cga agt cac tgg aaa aag acc cca gtg gtc	624
Ala Lys Asp Ser Ile Pro Arg Ser His Trp Lys Lys Thr Pro Val Val	
115 120 125	
cta aag gca aca gca gga cta cgc tta ctg cca gaa cac aaa gcc aag	672
Leu Lys Ala Thr Ala Gly Leu Arg Leu Leu Pro Glu His Lys Ala Lys	
130 135 140	
gct ctg ctc ttt gag gta aag gag atc ttc agg aag tca cct ttc ctg	720
Ala Leu Leu Phe Glu Val Lys Glu Ile Phe Arg Lys Ser Pro Phe Leu	
145 150 155	
gta cca aag ggc agt gtt agc atc atg gat gga tcc gac gaa ggc ata	768
Val Pro Lys Gly Ser Val Ser Ile Met Asp Gly Ser Asp Glu Gly Ile	
160 165 170	
tta gct tgg gtt act gtg aat ttt ctg aca ggt cag ctg cat ggc cac	816
Leu Ala Trp Val Thr Val Asn Phe Leu Thr Gly Gln Leu His Gly His	
175 180 185 190	
aga cag gag act gtg ggg acc ttg gac cta ggg gga gcc tcc acc caa	864
Arg Gln Glu Thr Val Gly Thr Leu Asp Leu Gly Gly Ala Ser Thr Gln	
195 200 205	
atc acg ttc ctg ccc cag ttt gag aaa act ctg gaa caa act cct agg	912
Ile Thr Phe Leu Pro Gln Phe Glu Lys Thr Leu Glu Gln Thr Pro Arg	
210 215 220	
ggc tac ctc act tcc ttt gag atg ttt aac agc act tat aag ctc tat	960
Gly Tyr Leu Thr Ser Phe Glu Met Phe Asn Ser Thr Tyr Lys Leu Tyr	
225 230 235	
aca cat agt tac ttg gga ttt gga ttg aaa gct gca aga cta gca acc	1008
Thr His Ser Tyr Leu Gly Phe Gly Leu Lys Ala Ala Arg Leu Ala Thr	
240 245 250	
ctg gga gcc ctg gag aca gaa ggg act gat ggg cac act ttc cgg agt	1056
Leu Gly Ala Leu Glu Thr Glu Gly Thr Asp Gly His Thr Phe Arg Ser	
255 260 265 270	
gcc tgt tta ccg aga tgg ttg gaa gca gag tgg atc ttt ggg ggt gtg	1104
Ala Cys Leu Pro Arg Trp Leu Glu Ala Glu Trp Ile Phe Gly Gly Val	
275 280 285	
aaa tac cag tat ggt ggc aac caa gaa ggg gag gtg ggc ttt gag ccc	1152
Lys Tyr Gln Tyr Gly Gly Asn Gln Glu Gly Glu Val Gly Phe Glu Pro	
290 295 300	
tgc tat gcc gaa gtg ctg agg gtg gta cga gga aaa ctt cac cag cca	1200
Cys Tyr Ala Glu Val Leu Arg Val Val Arg Gly Lys Leu His Gln Pro	
305 310 315	
gag gag gtc cag aga ggt tcc ttc tat gct ttc tct tac tat tat gac	1248
Glu Glu Val Gln Arg Gly Ser Phe Tyr Ala Phe Ser Tyr Tyr Tyr Asp	
320 325 330	

cga gct gtt gac aca gac atg att gat tat gaa aag ggg ggt att tta	1296
Arg Ala Val Asp Thr Asp Met Ile Asp Tyr Glu Lys Gly Gly Ile Leu	
335 340 345 350	
aaa gtt gaa gat ttt gaa aga aaa gcc agg gaa gtg tgt gat aac ttg	1344
Lys Val Glu Asp Phe Glu Arg Lys Ala Arg Glu Val Cys Asp Asn Leu	
355 360 365	
gaa aac ttc acc tca ggc agt cct ttc ctg tgc atg gat ctc agc tac	1392
Glu Asn Phe Thr Ser Gly Ser Pro Phe Leu Cys Met Asp Leu Ser Tyr	
370 375 380	
atc aca gcc ctg tta aag gat ggc ttt ggc ttt gca gac agc aca gtc	1440
Ile Thr Ala Leu Leu Lys Asp Gly Phe Gly Ala Asp Ser Thr Val	
385 390 395	
tta cag ctc aca aag aaa gtg aac aac ata gag acg ggc tgg gcc ttg	1488
Leu Gln Leu Thr Lys Lys Val Asn Asn Ile Glu Thr Gly Trp Ala Leu	
400 405 410	
ggg gcc acc ttt cac ctg ttg cag tct ctg ggc atc tcc cat	1530
Gly Ala Thr Phe His Leu Leu Gln Ser Leu Gly Ile Ser His	
415 420 425	
tgaggccacg tacttccttg gagacctgca tttgccaaca ccttttaag gggaggagag	1590
agcacttagt ttctgaacta gtctggaca tcctggactt gagcctagag atttaggttt	1650
aattaatttt acacatctaa tgtgaactgc tgcctaacca ctcaagagta cacagctggc	1710
accagagcat cacagagagc cctgtgagcc aaaaagtata gttttggaac ttaaccttgg	1770
agtgagagcc cagggacagg tccctggaaa ccaaagaaaa atcgcatttc aacccttga	1830
gtgcctcatt ccactgaata tttaaatttt cctcttaaat ggttaaactga cttattgcaa	1890
tcccaagacc catcaatatc agtattttt tcctccctat acagtgcctt gcccaccctt	1950
atctgcaccc acctccccctg aaaaagagag aaaaaaaaaa aaaaaaaaaa	1998

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 <211> 428
 <212> PRT
 <213> Homo sapiens

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Met Ala Thr Ser Trp Gly Thr Val Phe Phe Met Leu Val Val Ser Cys	
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Val Cys Ser Ala Val Ser His Arg Asn Gln Gln Thr Trp Phe Glu Gly	
20 25 30	
Ile Phe Leu Ser Ser Met Cys Pro Ile Asn Val Ser Ala Ser Thr Leu	
35 40 45	
Tyr Gly Ile Met Phe Asp Ala Gly Ser Thr Gly Thr Arg Ile His Val	
50 55 60	

Tyr	Thr	Phe	Val	Gln	Lys	Met	Pro	Gly	Gln	Leu	Pro	Ile	Leu	Glu	Gly
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Glu	Val	Phe	Asp	Ser	Val	Lys	Pro	Gly	Leu	Ser	Ala	Phe	Val	Asp	Gln
															95
Pro	Lys	Gln	Gly	Ala	Glu	Thr	Val	Gln	Gly	Leu	Leu	Glu	Val	Ala	Lys
															110
Asp	Ser	Ile	Pro	Arg	Ser	His	Trp	Lys	Lys	Thr	Pro	Val	Val	Leu	Lys
															125
Ala	Thr	Ala	Gly	Leu	Arg	Leu	Leu	Pro	Glu	His	Lys	Ala	Lys	Ala	Leu
															140
Leu	Phe	Glu	Val	Lys	Glu	Ile	Phe	Arg	Lys	Ser	Pro	Phe	Leu	Val	Pro
145															160
Lys	Gly	Ser	Val	Ser	Ile	Met	Asp	Gly	Ser	Asp	Glu	Gly	Ile	Leu	Ala
															175
Trp	Val	Thr	Val	Asn	Phe	Leu	Thr	Gly	Gln	Leu	His	Gly	His	Arg	Gln
															190
Glu	Thr	Val	Gly	Thr	Leu	Asp	Leu	Gly	Gly	Ala	Ser	Thr	Gln	Ile	Thr
															205
Phe	Leu	Pro	Gln	Phe	Glu	Lys	Thr	Leu	Glu	Gln	Thr	Pro	Arg	Gly	Tyr
															220
Leu	Thr	Ser	Phe	Glu	Met	Phe	Asn	Ser	Thr	Tyr	Lys	Leu	Tyr	Thr	His
225															240
Ser	Tyr	Leu	Gly	Phe	Gly	Leu	Lys	Ala	Ala	Arg	Leu	Ala	Thr	Leu	Gly
															255
Ala	Leu	Glu	Thr	Glu	Gly	Thr	Asp	Gly	His	Thr	Phe	Arg	Ser	Ala	Cys
															270
Leu	Pro	Arg	Trp	Leu	Glu	Ala	Glu	Trp	Ile	Phe	Gly	Gly	Val	Lys	Tyr
															285
Gln	Tyr	Gly	Gly	Asn	Gln	Glu	Gly	Glu	Val	Gly	Phe	Glu	Pro	Cys	Tyr
															300
Ala	Glu	Val	Leu	Arg	Val	Val	Arg	Gly	Lys	Leu	His	Gln	Pro	Glu	Glu
305															320
Val	Gln	Arg	Gly	Ser	Phe	Tyr	Ala	Phe	Ser	Tyr	Tyr	Tyr	Asp	Arg	Ala
															335
Val	Asp	Thr	Asp	Met	Ile	Asp	Tyr	Glu	Lys	Gly	Ile	Leu	Lys	Val	
															350
Glu	Asp	Phe	Glu	Arg	Lys	Ala	Arg	Glu	Val	Cys	Asp	Asn	Leu	Glu	Asn
															365

Phe Thr Ser Gly Ser Pro Phe Leu Cys Met Asp Leu Ser Tyr Ile Thr
370 375 380

Ala Leu Leu Lys Asp Gly Phe Gly Ala Asp Ser Thr Val Leu Gln
385 390 395 400

Leu Thr Lys Lys Val Asn Asn Ile Glu Thr Gly Trp Ala Leu Gly Ala
405 410 415

Thr Phe His Leu Leu Gln Ser Leu Gly Ile Ser His
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aagggagggc ctgaaggacc tccacaggag tgtgagcagc actgcttcag caacaaagcc 180
tcaggtccac atcttggaa gaat atg gcc act tcc tgg ggg gct gtc ttc 231
Met Ala Thr Ser Trp Gly Ala Val Phe
1 5

atg ctg atc ata gcc tgc gtt ggc agc act gtc ttc tac aga gaa cag 279
Met Leu Ile Ile Ala Cys Val Gly Ser Thr Val Phe Tyr Arg Glu Gln
10 15 20 25

cag acc tgg ttt gaa ggt gtc ttc ttg tct tcc atg tgc ccc att aat 327
Gln Thr Trp Phe Glu Gly Val Phe Leu Ser Ser Met Cys Pro Ile Asn
30 35 40

gtc agt gcc ggc acc ttt tat gga att atg ttt gat gcg ggc agc act 375
Val Ser Ala Gly Thr Phe Tyr Gly Ile Met Phe Asp Ala Gly Ser Thr
45 50 55

gga gct cgg att cat gtt tac act ttt gtg cag aaa aca gca gga cag 423
Gly Ala Arg Ile His Val Tyr Thr Phe Val Gln Lys Thr Ala Gly Gln
60 65 70

ctc ccc ttt ctg gaa ggt gaa att ttt gat tct gtg aag ccg gga ctt 471
Leu Pro Phe Leu Glu Gly Glu Ile Phe Asp Ser Val Lys Pro Gly Leu
75 80 85

tct gct ttt gtg gat cag ccc aaa cag ggt gct gag act gtc cag gag 519
Ser Ala Phe Val Asp Gln Pro Lys Gln Gly Ala Glu Thr Val Gln Glu
90 95 100 105

ctc ttg gag gtg gcc aaa gac tcg atc ccc aga agc cac tgg gaa agg		567
Leu Leu Glu Val Ala Lys Asp Ser Ile Pro Arg Ser His Trp Glu Arg		
110	115	120
acc ccg gtg gtt ctg aaa gca acg gcc gga ctc cgt ttg ctg cct gag		615
Thr Pro Val Val Leu Lys Ala Thr Ala Gly Leu Arg Leu Leu Pro Glu		
125	130	135
cag aaa gcc cag gct ctg ctc ttg gag gta gag gag atc ttc aag aat		663
Gln Lys Ala Gln Ala Leu Leu Leu Glu Val Glu Glu Ile Phe Lys Asn		
140	145	150
tca cct ttc ctg gtc cca gat ggc agc gtt agc atc atg gat ggg tcc		711
Ser Pro Phe Leu Val Pro Asp Gly Ser Val Ser Ile Met Asp Gly Ser		
155	160	165
tat gaa ggc ata cta gcc tgg gtt acc gtg aac ttt cta aca ggt cag		759
Tyr Glu Gly Ile Leu Ala Trp Val Thr Val Asn Phe Leu Thr Gly Gln		
170	175	180
185		
ctg cat ggt cgt ggc cag gag act gtg ggg acc ctt gac ctg ggg ggt		807
Leu His Gly Arg Gly Gln Glu Thr Val Gly Thr Leu Asp Leu Gly Gly		
190	195	200
gcc tcc acc caa atc acg ttt cta ccc cag ttt gag aaa acc ctg gaa		855
Ala Ser Thr Gln Ile Thr Phe Leu Pro Gln Phe Glu Lys Thr Leu Glu		
205	210	215
caa aca cct agg ggc tac ctc act tcc ttt gag atg ttt aac agc act		903
Gln Thr Pro Arg Gly Tyr Leu Thr Ser Phe Glu Met Phe Asn Ser Thr		
220	225	230
ttt aag ctc tat aca cat agt tac ttg gga ttt gga ctg aaa gct gca		951
Phe Lys Leu Tyr Thr His Ser Tyr Leu Gly Phe Gly Leu Lys Ala Ala		
235	240	245
aga ctg gca act ctg gga gcc ctg gaa gca aaa ggg act gat gga cat		999
Arg Leu Ala Thr Leu Gly Ala Leu Glu Ala Lys Gly Thr Asp Gly His		
250	255	260
265		
acg ttt cga agt gcc tgt tta cca aga tgg ttg gaa gca gag tgg atc		1047
Thr Phe Arg Ser Ala Cys Leu Pro Arg Trp Leu Glu Ala Glu Trp Ile		
270	275	280
ttt ggg ggt gtg aaa tac cag tat ggt ggt aac caa gaa ggg gag atg		1095
Phe Gly Gly Val Lys Tyr Gln Tyr Gly Gly Asn Gln Glu Gly Glu Met		
285	290	295
ggc ttt gaa ccc tgc tat gcg gaa gtg ctg agg gta gta cag ggg aaa		1143
Gly Phe Glu Pro Cys Tyr Ala Glu Val Leu Arg Val Val Gln Gly Lys		
300	305	310
ctt cac cag cca gaa gaa gtc cga gga agc gcc ttc tac gct ttc tct		1191
Leu His Gln Pro Glu Glu Val Arg Gly Ser Ala Phe Tyr Ala Phe Ser		
315	320	325

tac tac tac gat cga gcc gct gac aca cac ttg atc gat tat gaa aag		1239
Tyr Tyr Tyr Asp Arg Ala Ala Asp Thr His Leu Ile Asp Tyr Glu Lys		
330 335 340 345		
ggc ggg gtt tta aaa gtt gaa gat ttt gaa aga aaa gcc aga gaa gtg		1287
Gly Gly Val Leu Lys Val Glu Asp Phe Glu Arg Lys Ala Arg Glu Val		
350 355 360		
tgt gac aac ttg ggg agc ttc tcc tcg ggc agt cct ttc ctc tgc atg		1335
Cys Asp Asn Leu Gly Ser Phe Ser Ser Gly Ser Pro Phe Leu Cys Met		
365 370 375		
gac ctc act tac atc aca gcc ctg ttg aaa gat ggt ttg ggc ttt gcc		1383
Asp Leu Thr Tyr Ile Thr Ala Leu Leu Lys Asp Gly Leu Gly Phe Ala		
380 385 390		
gaa cgg cac cct ctt aca gct cac aaa gaa agt gaa caa cat aga gac		1431
Glu Arg His Pro Leu Thr Ala His Lys Glu Ser Glu Gln His Arg Asp		
395 400 405		
tgg ttg ggc ctt ggg ggc cac ctt tca cct gct cca gtc tct ggg cat		1479
Trp Leu Gly Leu Gly His Leu Ser Pro Ala Pro Val Ser Gly His		
410 415 420 425		
cac cag ctg agg cca agc tcc acc tct gaa gcc tgc att tct gaa cca		1527
His Gln Leu Arg Pro Ser Ser Thr Ser Glu Ala Cys Ile Ser Glu Pro		
430 435 440		
gtt ttc tca cag gaa ggc gtg gac tca gag aca ttt tct gac ctc tct		1575
Val Phe Ser Gln Glu Gly Val Asp Ser Glu Thr Phe Ser Asp Leu Ser		
445 450 455		
gga aaa gcc tgg ccc gaa acc cgt taactggttt tataaggagg gagggggttt		1629
Gly Lys Ala Trp Pro Glu Thr Arg		
460 465		
tagatgagtc ttgctttga gcctagtat ttgggcttca atgatttgc a catctaatgt		1689
gaatagctcc taaccacttg gtgggtgcat ggctggcacc agactgtaaa tctttggga		1749
ttctttgtac agagtccctgc aaaggaaaaa agagaaaaagg tttggaaactc catgctagat		1809
tgcgagttca gagacaggc cctggggacc aaagaacaat ctcgtttcaa cccttggatg		1869
cctcattgct ttgaatggat tcattttgc ttataagctg atttactgaa atcccataac		1929
ccatcaatgc tgttaatttt tttcttccta cccttattac attccctacc ctaaaagcct		1989
gggggaaata cctgggtttt cttcccatct ataattgaga aagagggggg aaaagatact		2049
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aaaaaaaaaaa		2119

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<212> PRT

<213> Mus musculus

<400> 8

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			20					25					30		
Phe	Leu	Ser	Ser	Met	Cys	Pro	Ile	Asn	Val	Ser	Ala	Gly	Thr	Phe	Tyr
				35				40					45		
Gly	Ile	Met	Phe	Asp	Ala	Gly	Ser	Thr	Gly	Ala	Arg	Ile	His	Val	Tyr
		50				55				60					
Thr	Phe	Val	Gln	Lys	Thr	Ala	Gly	Gln	Leu	Pro	Phe	Leu	Glu	Gly	Glu
			65			70				75			80		
Ile	Phe	Asp	Ser	Val	Lys	Pro	Gly	Leu	Ser	Ala	Phe	Val	Asp	Gln	Pro
				85				90					95		
Lys	Gln	Gly	Ala	Glu	Thr	Val	Gln	Glu	Leu	Leu	Glu	Val	Ala	Lys	Asp
			100				105					110			
Ser	Ile	Pro	Arg	Ser	His	Trp	Glu	Arg	Thr	Pro	Val	Val	Leu	Lys	Ala
			115				120				125				
Thr	Ala	Gly	Leu	Arg	Leu	Leu	Pro	Glu	Gln	Lys	Ala	Gln	Ala	Leu	Leu
			130				135			140					
Leu	Glu	Val	Glu	Glu	Ile	Phe	Lys	Asn	Ser	Pro	Phe	Leu	Val	Pro	Asp
		145				150				155			160		
Gly	Ser	Val	Ser	Ile	Met	Asp	Gly	Ser	Tyr	Glu	Gly	Ile	Leu	Ala	Trp
			165				170					175			
Val	Thr	Val	Asn	Phe	Leu	Thr	Gly	Gln	Leu	His	Gly	Arg	Gly	Gln	Glu
			180				185				190				
Thr	Val	Gly	Thr	Leu	Asp	Leu	Gly	Gly	Ala	Ser	Thr	Gln	Ile	Thr	Phe
			195				200				205				
Leu	Pro	Gln	Phe	Glu	Lys	Thr	Leu	Glu	Gln	Thr	Pro	Arg	Gly	Tyr	Leu
		210					215				220				
Thr	Ser	Phe	Glu	Met	Phe	Asn	Ser	Thr	Phe	Lys	Leu	Tyr	Thr	His	Ser
		225				230				235			240		
Tyr	Leu	Gly	Phe	Gly	Leu	Lys	Ala	Ala	Arg	Leu	Ala	Thr	Leu	Gly	Ala
			245				250					255			
Leu	Glu	Ala	Lys	Gly	Thr	Asp	Gly	His	Thr	Phe	Arg	Ser	Ala	Cys	Leu
			260				265				270				
Pro	Arg	Trp	Leu	Glu	Ala	Glu	Trp	Ile	Phe	Gly	Gly	Val	Lys	Tyr	Gln
			275				280				285				

Tyr Gly Gly Asn Gln Glu Gly Glu Met Gly Phe Glu Pro Cys Tyr Ala
 290 295 300
 Glu Val Leu Arg Val Val Gln Gly Lys Leu His Gln Pro Glu Glu Val
 305 310 315 320
 Arg Gly Ser Ala Phe Tyr Ala Phe Ser Tyr Tyr Tyr Asp Arg Ala Ala
 325 330 335
 Asp Thr His Leu Ile Asp Tyr Glu Lys Gly Gly Val Leu Lys Val Glu
 340 345 350
 Asp Phe Glu Arg Lys Ala Arg Glu Val Cys Asp Asn Leu Gly Ser Phe
 355 360 365
 Ser Ser Gly Ser Pro Phe Leu Cys Met Asp Leu Thr Tyr Ile Thr Ala
 370 375 380
 Leu Leu Lys Asp Gly Leu Gly Phe Ala Glu Arg His Pro Leu Thr Ala
 385 390 395 400
 His Lys Glu Ser Glu Gln His Arg Asp Trp Leu Gly Leu Gly Gly His
 405 410 415
 Leu Ser Pro Ala Pro Val Ser Gly His His Gln Leu Arg Pro Ser Ser
 420 425 430
 Thr Ser Glu Ala Cys Ile Ser Glu Pro Val Phe Ser Gln Glu Gly Val
 435 440 445
 Asp Ser Glu Thr Phe Ser Asp Leu Ser Gly Lys Ala Trp Pro Glu Thr
 450 455 460
 Arg
 465

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 <212> PRT
 <213> Homo sapiens

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Ile Phe Leu Ser Ser Met Cys Pro Ile Asn Val Ser Ala Ser Thr Leu
 35 40 45

Tyr Gly Ile Met Phe Asp Ala Gly Ser Thr Gly Thr Arg Ile His Val
 50 55 60

Tyr Thr Phe Val Gln Lys Met Pro Gly Gln Leu Pro Ile Leu Glu Gly
 65 70 75 80

Glu	Val	Phe	Asp	Ser	Val	Lys	Pro	Gly	Leu	Ser	Ala	Phe	Val	Asp	Gln
85									90					95	
Pro	Lys	Gln	Gly	Ala	Glu	Thr	Val	Gln	Gly	Leu	Leu	Glu	Val	Ala	Lys
100								105					110		
Asp	Ser	Ile	Pro	Arg	Ser	His	Trp	Lys	Lys	Thr	Pro	Val	Val	Leu	Lys
115								120					125		
Ala	Thr	Ala	Gly	Leu	Arg	Leu	Leu	Pro	Glu	His	Lys	Ala	Lys	Ala	Leu
130								135					140		
Leu	Phe	Glu	Val	Lys	Glu	Ile	Phe	Arg	Lys	Ser	Pro	Phe	Leu	Val	Pro
145								150					155		160
Lys	Gly	Ser	Val	Ser	Ile	Met	Asp	Gly	Ser	Asp	Glu	Gly	Ile	Leu	Ala
165								170					175		
Trp	Val	Thr	Val	Asn	Phe	Leu	Thr	Gly	Gln	Leu	His	Gly	His	Arg	Gln
180								185					190		
Glu	Thr	Val	Gly	Thr	Leu	Asp	Leu	Gly	Gly	Ala	Ser	Thr	Gln	Ile	Thr
195								200					205		
Phe	Leu	Pro	Gln	Phe	Glu	Lys	Thr	Leu	Glu	Gln	Thr	Pro	Arg	Gly	Tyr
210								215					220		
Leu	Thr	Ser	Phe	Glu	Met	Phe	Asn	Ser	Thr	Tyr	Lys	Leu	Tyr	Thr	His
225								230					235		240
Ser	Tyr	Leu	Gly	Phe	Gly	Leu	Lys	Ala	Ala	Arg	Leu	Ala	Thr	Leu	Gly
								245					250		255
Ala	Leu	Glu	Thr	Glu	Gly	Thr	Asp	Gly	His	Thr	Phe	Arg	Ser	Ala	Cys
								260					265		270
Leu	Pro	Arg	Trp	Leu	Glu	Ala	Glu	Trp	Ile	Phe	Gly	Gly	Val	Lys	Tyr
								275					280		285
Gln	Tyr	Gly	Gly	Asn	Gln	Glu	Gly	Glu	Val	Gly	Phe	Glu	Pro	Cys	Tyr
								290					295		300
Ala	Glu	Val	Leu	Arg	Val	Val	Arg	Gly	Lys	Leu	His	Gln	Pro	Glu	Glu
								305					310		320
Val	Gln	Arg	Gly	Ser	Phe	Tyr	Ala	Phe	Ser	Tyr	Tyr	Tyr	Asp	Arg	Ala
								325					330		335
Val	Asp	Thr	Asp	Met	Ile	Asp	Tyr	Glu	Lys	Gly	Gly	Ile	Leu	Lys	Val
								340					345		350
Glu	Asp	Phe	Glu	Arg	Lys	Ala	Arg	Glu	Val	Cys	Asp	Asn	Leu	Glu	Asn
								355					360		365
Phe	Thr	Ser	Gly	Ser	Pro	Phe	Leu	Cys	Met	Asp	Leu	Ser	Tyr	Ile	Thr
								370					375		380

Ala Leu Leu Lys Asp Gly Phe Gly Ala Asp Ser Thr Val Leu Gln
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Leu Thr Lys Lys Val Asn Asn Ile Glu Thr Gly Trp Ala Leu Gly Ala
405 410 415

Thr Phe His Leu Leu Gln Ser Leu Gly Ile Ser His
420 425

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<213> P. sativum

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Lys Ile Phe Leu Lys Gln Glu Glu Ile Ser Ser Tyr Ala Val Val Phe
35 40 45

Asp Ala Gly Ser Thr Gly Ser Arg Ile His Val Tyr His Phe Asn Gln
50 55 60

Asn Leu Asp Leu Leu His Ile Gly Lys Gly Val Glu Tyr Tyr Asn Lys
65 70 75 80

Ile Thr Pro Gly Leu Ser Ser Tyr Ala Asn Asn Pro Glu Gln Ala Ala
85 90 95

Lys Ser Leu Ile Pro Leu Leu Glu Gln Ala Glu Asp Val Val Pro Asp
100 105 110

Asp Leu Gln Pro Lys Thr Pro Val Arg Leu Gly Ala Thr Ala Gly Leu
115 120 125

Arg Leu Leu Asn Gly Asp Ala Ser Glu Lys Ile Leu Gln Ser Val Arg
130 135 140

Asp Met Leu Ser Asn Arg Ser Thr Phe Asn Val Gln Pro Asp Ala Val
145 150 155 160

Ser Ile Ile Asp Gly Thr Gln Glu Gly Ser Tyr Leu Trp Val Thr Val
165 170 175

Asn Tyr Ala Leu Gly Asn Leu Gly Lys Lys Tyr Thr Lys Thr Val Gly
180 185 190

Val Ile Asp Leu Gly Gly Ser Val Gln Met Ala Tyr Ala Val Ser
195 200 205

Lys Lys Thr Ala Lys Asn Ala Pro Lys Val Ala Asp Gly Asp Asp Pro
210 215 220

Tyr Ile Lys Lys Val Val Leu Lys Gly Ile Pro Tyr Asp Leu Tyr Val
 225 230 235 240
 His Ser Tyr Leu His Phe Gly Arg Glu Ala Ser Arg Ala Glu Ile Leu
 245 250 255
 Lys Leu Thr Pro Arg Ser Pro Asn Pro Cys Leu Leu Ala Gly Phe Asn
 260 265 270
 Gly Ile Tyr Thr Tyr Ser Gly Glu Glu Phe Lys Ala Thr Ala Tyr Thr
 275 280 285
 Ser Gly Ala Asn Phe Asn Lys Cys Lys Asn Thr Ile Arg Lys Ala Leu
 290 295 300
 Lys Leu Asn Tyr Pro Cys Pro Tyr Gln Asn Cys Thr Phe Gly Gly Ile
 305 310 315 320
 Trp Asn Gly Gly Gly Asn Gly Gln Lys Asn Leu Phe Ala Ser Ser
 325 330 335
 Ser Phe Phe Tyr Leu Pro Glu Asp Thr Gly Met Val Asp Ala Ser Thr
 340 345 350
 Pro Asn Phe Ile Leu Arg Pro Val Asp Ile Glu Thr Lys Ala Lys Glu
 355 360 365
 Ala Cys Ala Leu Asn Phe Glu Asp Ala Lys Ser Thr Tyr Pro Phe Leu
 370 375 380
 Asp Lys Lys Asn Val Ala Ser Tyr Val Cys Met Asp Leu Ile Tyr Gln
 385 390 395 400
 Tyr Val Leu Leu Val Asp Gly Phe Gly Leu Asp Pro Leu Gln Lys Ile
 405 410 415
 Thr Ser Gly Lys Glu Ile Glu Tyr Gln Asp Ala Ile Val Glu Ala Ala
 420 425 430
 Trp Pro Leu Gly Asn Ala Val Glu Ala Ile Ser Ala Leu Pro Lys Phe
 435 440 445
 Glu Arg Leu Met Tyr Phe Val
 450 455

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 <211> 454
 <212> PRT
 <213> Solanum tuberosum

<400> 11
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 1 5 10 15
 Leu Val Leu Pro Leu Ser Leu Leu Ser Lys Asn Val Asn Ala Gln Ile
 20 25 30

Pro Leu Arg Arg His Leu Leu Ser His Glu Ser Glu His Tyr Ala Val
 35 40 45
 Ile Phe Asp Ala Gly Ser Thr Gly Ser Arg Val His Val Phe Arg Phe
 50 55 60
 Asp Glu Lys Leu Gly Leu Leu Pro Ile Gly Asn Asn Ile Glu Tyr Phe
 65 70 75 80
 Met Ala Thr Glu Pro Gly Leu Ser Ser Tyr Ala Glu Asp Pro Lys Ala
 85 90 95
 Ala Ala Asn Ser Leu Glu Pro Leu Leu Asp Gly Ala Glu Gly Val Val
 100 105 110
 Pro Gln Glu Leu Gln Ser Glu Thr Pro Leu Glu Leu Gly Ala Thr Ala
 115 120 125
 Gly Leu Arg Met Leu Lys Gly Asp Ala Ala Glu Lys Ile Leu Gln Ala
 130 135 140
 Val Arg Asn Leu Val Lys Asn Gln Ser Thr Phe His Ser Lys Asp Gln
 145 150 155 160
 Trp Val Thr Ile Leu Asp Gly Thr Gln Glu Gly Ser Tyr Met Trp Ala
 165 170 175
 Ala Ile Asn Tyr Leu Leu Gly Asn Leu Gly Lys Asp Tyr Lys Ser Thr
 180 185 190
 Thr Ala Thr Ile Asp Leu Gly Gly Ser Val Gln Met Ala Tyr Ala
 195 200 205
 Ile Ser Asn Glu Gln Phe Ala Lys Ala Pro Gln Asn Glu Asp Gly Glu
 210 215 220
 Pro Tyr Val Gln Gln Lys His Leu Met Ser Lys Asp Tyr Asn Leu Tyr
 225 230 235 240
 Val His Ser Tyr Leu Asn Tyr Gly Gln Leu Ala Gly Arg Ala Glu Ile
 245 250 255
 Phe Lys Ala Ser Arg Asn Glu Ser Asn Pro Cys Ala Leu Glu Gly Cys
 260 265 270
 Asp Gly Tyr Tyr Ser Tyr Gly Gly Val Asp Tyr Lys Val Lys Ala Pro
 275 280 285
 Lys Lys Gly Ser Ser Trp Lys Arg Cys Arg Arg Leu Thr Arg His Ala
 290 295 300
 Leu Lys Ile Asn Ala Lys Cys Asn Ile Glu Glu Cys Thr Phe Asn Gly
 305 310 315 320
 Val Trp Asn Gly Gly Asp Gly Gln Lys Asn Ile His Ala Ser
 325 330 335

Ser Phe Phe Tyr Asp Ile Gly Ala Gln Val Gly Ile Val Asp Thr Lys
 340 345 350
 Phe Pro Ser Ala Leu Ala Lys Pro Ile Gln Tyr Leu Asn Ala Ala Lys
 355 360 365
 Val Ala Cys Gln Thr Asn Val Ala Asp Ile Lys Ser Ile Phe Pro Lys
 370 375 380
 Thr Gln Asp Arg Asn Ile Pro Tyr Leu Cys Met Asp Leu Ile Tyr Glu
 385 390 395 400
 Tyr Thr Leu Leu Val Asp Gly Phe Gly Leu Asn Pro His Lys Glu Ile
 405 410 415
 Thr Val Ile His Asp Val Gln Tyr Lys Asn Tyr Leu Val Gly Ala Ala
 420 425 430
 Trp Pro Leu Gly Cys Ala Ile Asp Leu Val Ser Ser Thr Thr Asn Lys
 435 440 445
 Ile Arg Val Ala Ser Ser
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 <213> *Saccharomyces cerevisiae*
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 20 25 30
 Ala Val Lys Ser Gln Thr Ser Gln Thr Cys Ser Glu Glu His Lys Tyr
 35 40 45
 Val Ile Met Ile Asp Ala Gly Ser Thr Gly Ser Arg Val His Ile Tyr
 50 55 60
 Lys Phe Asp Val Cys Thr Ser Pro Pro Thr Leu Leu Asp Glu Lys Phe
 65 70 75 80
 Asp Met Leu Glu Pro Gly Leu Ser Ser Phe Asp Thr Asp Ser Val Gly
 85 90 95
 Ala Ala Asn Ser Leu Asp Pro Leu Leu Lys Val Ala Met Asn Tyr Val
 100 105 110
 Pro Ile Lys Ala Arg Ser Cys Thr Pro Val Ala Val Lys Ala Thr Ala
 115 120 125
 Gly Leu Arg Leu Leu Gly Asp Ala Lys Ser Ser Lys Ile Leu Ser Ala
 130 135 140

Val Arg Asp His Leu Glu Lys Asp Tyr Pro Phe Pro Val Val Glu Gly
 145 150 155 160
 Asp Gly Val Ser Ile Met Gly Gly Asp Glu Glu Gly Val Phe Ala Trp
 165 170 175
 Ile Thr Thr Asn Tyr Leu Leu Gly Asn Ile Gly Ala Asn Gly Pro Lys
 180 185 190
 Leu Pro Thr Ala Ala Val Phe Asp Leu Gly Gly Ser Thr Gln Ile
 195 200 205
 Val Glu Glu Pro Thr Phe Pro Ile Asn Glu Lys Met Val Asp Gly Glu
 210 215 220
 His Lys Phe Asp Leu Lys Phe Gly Asp Glu Asn Tyr Thr Leu Tyr Gln
 225 230 235 240
 Phe Ser His Leu Gly Tyr Gly Leu Lys Glu Gly Arg Asn Lys Val Asn
 245 250 255
 Ser Val Leu Val Glu Asn Ala Leu Lys Asp Lys Ile Leu Lys Gly Cys
 260 265 270
 Asn Thr Lys Thr His Cys Leu Ser Ser Pro Cys Leu Pro Pro Lys Val
 275 280 285
 Asn Ala Thr Asn Glu Lys Val Thr Leu Glu Ser Lys Glu Thr Tyr Thr
 290 295 300
 Ile Asp Phe Ile Gly Pro Asp Glu Pro Ser Gly Ala Gln Cys Arg Phe
 305 310 315 320
 Leu Thr Asp Glu Ile Leu Asn Lys Asp Ala Gln Cys Gln Ser Pro Pro
 325 330 335
 Cys Ser Phe Asn Gly Val His Gln Pro Ser Leu Val Arg Thr Phe Lys
 340 345 350
 Glu Ser Asn Asp Ile Tyr Ile Phe Ser Tyr Phe Tyr Asp Arg Thr Thr
 355 360 365
 Arg Pro Leu Gly Met Pro Leu Ser Phe Thr Leu Asn Glu Leu Asn Asp
 370 375 380
 Leu Ala Arg Ile Val Cys Lys Gly Glu Glu Thr Trp Asn Ser Val Phe
 385 390 395 400
 Ser Gly Ile Ala Gly Ser Leu Asp Glu Leu Glu Ser Asp Ser His Phe
 405 410 415
 Cys Leu Asp Leu Ser Phe Gln Val Ser Leu Leu His Thr Gly Tyr Asp
 420 425 430
 Ile Pro Leu Gln Arg Glu Leu Arg Thr Gly Lys Lys Ile Ala Asn Lys
 435 440 445

Glu Ile Gly Trp Cys Leu Gly Ala Ser Leu Pro Leu Leu Lys Ala Asp
450 455 460

Asn Trp Lys Cys Lys Ile Gln Ser Ala
465 470

<210> 13
<211> 153
<212> PRT
<213> Homo sapiens

<400> 13
Lys Tyr Gly Ile Val Leu Asp Ala Gly Ser Ser His Thr Ser Leu Tyr
1 5 10 15

Ile Tyr Lys Trp Pro Ala Glu Lys Glu Asn Asp Thr Gly Val Val His
20 25 30

Gln Val Glu Glu Cys Arg Val Lys Gly Pro Gly Ile Ser Lys Phe Val
35 40 45

Gln Lys Val Asn Glu Ile Gly Ile Tyr Leu Thr Asp Cys Met Glu Arg
50 55 60

Ala Arg Glu Val Ile Pro Arg Ser Gln His Gln Glu Thr Pro Val Tyr
65 70 75 80

Leu Gly Ala Thr Ala Gly Met Arg Leu Leu Arg Met Glu Ser Glu Glu
85 90 95

Leu Ala Asp Arg Val Leu Asp Val Val Glu Arg Ser Leu Ser Asn Tyr
100 105 110

Pro Phe Asp Phe Gln Gly Ala Arg Ile Ile Thr Gly Gln Glu Glu Gly
115 120 125

Ala Tyr Gly Trp Ile Thr Ile Asn Tyr Leu Leu Gly Lys Phe Ser Gln
130 135 140

Lys Thr Arg Trp Phe Ser Ile Val Pro
145 150

<210> 14
<211> 154
<212> PRT
<213> Rattus norvegicus

<400> 14
Val Lys Tyr Gly Ile Val Leu Asp Ala Gly Ser Ser His Thr Asn Leu
1 5 10 15

Tyr Ile Tyr Lys Trp Pro Ala Glu Lys Glu Asn Asp Thr Gly Val Val
20 25 30

Gln Leu Leu Glu Glu Cys Gln Val Lys Gly Pro Gly Ile Ser Lys Tyr
35 40 45

Ala Gln Lys Thr Asp Glu Ile Ala Ala Tyr Leu Ala Glu Cys Met Lys
 50 55 60

Met Ser Thr Glu Arg Ile Pro Ala Ser Lys Gln His Gln Thr Pro Val
 65 70 75 80

Tyr Leu Gly Ala Thr Ala Gly Met Arg Leu Leu Arg Met Glu Ser Lys
 85 90 95

Gln Ser Ala Asp Glu Val Leu Ala Ala Val Ser Arg Ser Leu Lys Ser
 100 105 110

Tyr Pro Phe Asp Phe Gln Gly Ala Lys Ile Ile Thr Gly Gln Glu Glu
 115 120 125

Gly Ala Tyr Gly Trp Ile Thr Ile Asn Tyr Leu Leu Gly Arg Phe Thr
 130 135 140

Gln Glu Gln Ser Trp Leu Asn Phe Ile Ser
 145 150

<210> 15
 <211> 153
 <212> PRT
 <213> Homo sapiens

<400> 15
 Lys Tyr Gly Ile Val Leu Asp Ala Gly Ser Ser His Thr Ser Met Phe
 1 5 10 15

Ile Tyr Lys Trp Pro Ala Asp Lys Glu Asn Asp Thr Gly Ile Val Gly
 20 25 30

Gln His Ser Ser Cys Asp Val Pro Gly Gly Ile Ser Ser Tyr Ala
 35 40 45

Asp Asn Pro Ser Gly Ala Ser Gln Ser Leu Val Gly Cys Leu Glu Gln
 50 55 60

Ala Leu Gln Asp Val Pro Lys Glu Arg His Ala Gly Thr Pro Leu Tyr
 65 70 75 80

Leu Gly Ala Thr Ala Gly Met Arg Leu Leu Asn Leu Thr Asn Pro Glu
 85 90 95

Ala Ser Thr Ser Val Leu Met Ala Val Thr His Thr Leu Thr Gln Tyr
 100 105 110

Pro Phe Asp Phe Arg Gly Ala Arg Ile Leu Ser Gly Gln Glu Glu Gly
 115 120 125

Val Phe Gly Trp Val Thr Ala Asn Tyr Leu Leu Glu Asn Phe Ile Lys
 130 135 140

Tyr Gly Trp Val Gly Arg Trp Phe Arg
 145 150

<210> 16
 <211> 150
 <212> PRT
 <213> Gallus gallus

<400> 16
 Phe Lys Tyr Gly Ile Val Leu Asp Ala Gly Ser Ser His Thr Ala Val
 1 5 10 15

Phe Ile Tyr Lys Trp Pro Ala Asp Lys Glu Asn Asp Thr Gly Val Val
 20 25 30

Ser Glu His Ser Met Cys Asp Val Glu Gly Pro Gly Ile Ser Ser Tyr
 35 40 45

Ser Ser Lys Pro Pro Ala Ala Gly Lys Ser Leu Glu His Cys Leu Ser
 50 55 60

Gln Ala Met Arg Asp Val Pro Lys Glu Lys His Ala Asp Thr Pro Leu
 65 70 75 80

Tyr Leu Gly Ala Thr Ala Gly Met Arg Leu Leu Thr Ile Ala Asp Pro
 85 90 95

Pro Ser Gln Thr Cys Leu Ser Ala Val Met Ala Thr Leu Lys Ser Tyr
 100 105 110

Pro Phe Asp Phe Gly Gly Ala Lys Ile Leu Ser Gly Glu Glu Gly
 115 120 125

Val Phe Gly Trp Ile Thr Ala Asn Tyr Leu Leu Glu Asn Phe Ile Lys
 130 135 140

Arg Gly Trp Leu Gly Glu
 145 150

<210> 17
 <211> 148
 <212> PRT
 <213> Caenorhabditis elegans

<400> 17
 Ile Lys Tyr Gly Val Ile Cys Asp Ala Gly Ser Ser Gly Thr Arg Leu
 1 5 10 15

Phe Val Tyr Thr Leu Lys Pro Leu Ser Gly Gly Leu Thr Asn Ile Asp
 20 25 30

Thr Leu Ile His Glu Ser Gly Pro Val Val Lys Lys Val Thr Pro Gly
 35 40 45

Leu Ser Ser Phe Gly Asp Lys Pro Glu Gln Val Val Glu Tyr Leu Thr
 50 55 60

Pro Leu Leu Arg Phe Ala Glu Glu His Ile Pro Tyr Glu Gln Leu Gly
 65 70 75 80

Glu Thr Asp Leu Leu Ile Phe Ala Thr Ala Gly Met Arg Leu Leu Pro
85 90 95
Glu Ala Gln Lys Asp Ala Ile Ile Lys Asn Leu Gln Asn Gly Leu Lys
100 105 110
Ser Val Thr Ala Leu Arg Val Ser Asp Ser Asn Ile Arg Ile Ile Asp
115 120 125
Gly Ala Trp Glu Gly Ile Tyr Ser Trp Ile Ala Val Asn Tyr Ile Leu
130 135 140
Gly Arg Phe Asp
145

<210> 18
<211> 10
<212> RNA
<213> *Mus musculus*

<400> 18
aagaauaagg

10

<210> 19
<211> 10
<212> RNA
<213> *Vertebrate*

<400> 19
gcgcgccaagg

10

<210> 20
<211> 20
<212> DNA
<213> *Artificial Sequence*

<220>
<223> *Description of Artificial Sequence: Primer*

<400> 20
ccagactgt aatcttttgg

20

<210> 21
<211> 20
<212> DNA
<213> *Artificial Sequence*

<220>
<223> *Description of Artificial Sequence: Primer*

<400> 21
aggaaatgt aataagggtag

20

<210> 22
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 22
ctgcttgagt gacgtctctg 20

<210> 23
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 23
cacatgaggt tcagtcgtg 20

<210> 24
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 24
gtgaagtggc tgccttcagg 20

<210> 25
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 25
cctttgactc gggactccag 20

<210> 26
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 26
gaactgctgc ctaaccactc 20

<210> 27
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 27
attgatgggt cttgggattg c

21

<210> 28
<211> 10
<212> RNA
<213> Homo sapiens

<400> 28
augugaauga

10

<210> 29
<211> 10
<212> RNA
<213> Homo sapiens

<400> 29
acaaggauga

10